

FEMALE BROWN-HEADED COWBIRD WITH PARTIAL MALE PLUMAGE

SCOTT G. SUMMERS^{1,2} AND RICHARD M. KOSTECKE¹

ABSTRACT.—There are few records of functionally female birds exhibiting partial to total male plumages. On 26 March 2004, we collected a female Brown-headed Cowbird (*Molothrus ater*) at Fort Hood, Texas, with a presumably functional ovary and whose back and belly exhibited the glossy, greenish-black plumage typical of after-hatch-year males. This individual is a unique specimen because (with the exception of partial albinism) no aberrant plumages have been reported for Brown-headed Cowbirds. Received 27 May 2004, accepted 16 October 2004.

Fort Hood, an active military installation located in central Texas (Bell and Coryell counties), practices Brown-headed Cowbird (*Molothrus ater*; hereafter cowbird) control as a means of reducing brood parasitism on endangered songbirds that nest on the installation (Eckrich et al. 1999). On 26 March 2004, a cowbird with an unusual plumage was trapped at Fort Hood. The head and breast of this bird were brownish-gray (i.e., typical female coloration; Fig. 1). Although individual and groups of feathers on its back and belly were also brownish-gray, its back and belly were predominately a glossy, greenish-black typical of after-hatch-year males (Pyle 1997). Upon dissection, we discovered that the cowbird had a reduced (i.e., follicles were small, approximately 1 mm in diameter, and white), but presumably functional, ovary on its left side. Wing chord (104 mm) and tail (71 mm) measurements were consistent with the cowbird being a large *M. a. artemisiae* female (Pyle 1997).

Females that exhibit partial to total male plumages are rare but have been reported for Northern Bobwhite (*Colinus virginianus*; Buchanan and Parkes 1948), American (*Falco sparverius*; Parrish et al. 1987) and Lesser (*F. naumanni*; Tella et al. 1996) kestrels, Bay-breasted Warbler (*Dendroica castanea*; Stoddard 1921), and Spotted Towhee (*Pipilo maculatus*; Bergtold 1916). Male-like feather pigmentation can result from hormonal abnormalities. Andersson (1994) suggested that both sexes carry the genes that influence sec-

ondary sexual characteristics, and expression of these genes is related to sex-specific hormones (i.e., estrogen and testosterone). Further, Owens and Short (1995) suggested that the showier breeding plumage of males of many species is actually the neutral stage of development and that more cryptic female plumages are induced by estrogen production. Thus, the male plumage characteristics observed on our female cowbird could have resulted from reduced hormone secretion. Alternatively, the observed plumage may be the result of a genetic abnormality. Cowbirds maintain similar-looking plumage year-round; therefore, hormones may not have a large influence on feather pigmentation (Lowther 1993, Owens and Short 1995, Pyle 1997).

Regardless of the mechanism responsible for its aberrant plumage, the cowbird we collected is a unique specimen. With the exception of partial albinism (Stewart 1963), few unusual plumages have been reported for cowbirds (Lowther 1993, Ortega 1998). Further, we have trapped and destroyed >19,512 female cowbirds at Fort Hood during 1999–2003 (The Nature Conservancy of Texas, Fort Hood, unpubl. data), and none of the birds exhibited unusual plumages. We deposited our cowbird specimen (FMNH 440412) at the Field Museum of Natural History, Chicago, Illinois.

ACKNOWLEDGMENTS

All cowbirds were captured and handled under Federal Bird Marking and Salvage Permit 22998-H, Federal Fish and Wildlife Permit MB085693-0, and Texas Scientific Permit Number SPR-0204-356. T. A. Greene, P. E. Lowther, and C. P. Ortega commented on the manuscript. Funding was provided by the United States Army through cooperative agreement DPW-

¹ The Nature Conservancy of Texas, P.O. Box 5190, Fort Hood, TX 76544-0190, USA.

² Corresponding author; e-mail: ssummers@tnc.org



FIG. 1. Female Brown-headed Cowbird (*Molothrus ater*) trapped at Fort Hood, Texas, on 26 March 2004, exhibiting brownish-gray head and breast typical of females, but a predominately glossy, greenish-black back and belly typical of after-hatch-year males. Photograph by D. A. Cimprich.

ENV-02-A-0001 with The Nature Conservancy of Texas. The content of this manuscript does not necessarily reflect the position or policy of the United States government and no official endorsement should be inferred.

LITERATURE CITED

- ANDERSSON, M. 1994. Sexual selection. Princeton University Press, Princeton, New Jersey.
- BERGTOLD, W. H. 1916. Pseudo-masculinity in birds. *Auk* 33:439.
- BUCHANAN, F. W. AND K. C. PARKES. 1948. A female Bob-white in male plumage. *Wilson Bulletin* 60: 119–120.
- ECKRICH, G. H., T. E. KOLOSZAR, AND M. D. GOERING. 1999. Effective landscape management of Brown-headed Cowbirds at Fort Hood, Texas. *Studies in Avian Biology* 18:267–274.
- LOWTHER, P. E. 1993. Brown-headed Cowbird (*Molothrus ater*). *The Birds of North America*, no. 47.
- ORTEGA, C. P. 1998. Cowbirds and other brood parasites. University of Arizona Press, Tucson.
- OWENS, I. P. F. AND R. V. SHORT. 1995. Hormonal basis of sexual dimorphism in birds: implications for new theories of sexual selection. *Trends in Ecology and Evolution* 10:44–47.
- PARRISH, J. R., J. STODDARD, AND C. M. WHITE. 1987. Sexually mosaic plumage in a female American Kestrel. *Condor* 89:911–913.
- PYLE, P. 1997. Identification guide to North American Birds, part I. Slate Creek Press, Bolinas, California.
- STEWART, P. A. 1963. Abnormalities among Brown-headed Cowbirds trapped in Alabama. *Bird-Banding* 34:199–202.
- STODDARD, H. L. 1921. Female Bay-breasted Warbler in male plumage. *Auk* 38:117.
- TELLA, J. L., J. A. DONÁZAR, AND F. HIRALDO. 1996. Variable expression of sexually mosaic plumage in female Lesser Kestrels. *Condor* 98:643–644.